

Work Order ID 132723

Thursday, May 07, 2015 2:57:05 PM

132723

Page 1

Item ID: D5090-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Duct Assembly
 Start Date: 5/4/2015 Start Qty: 6.00 ***6*** Cust Item ID:
 Required Date: 5/7/2015 Req'd Qty: 6.00 ***6*** Customer:
 Reference:

Approvals: Process Plan: C2 Date: MAR 08 2015 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D5090	C								

110

0.00

110

Small Fab

Small Fab

Memo

0.00

1- CHECK MESUREMENTS BEFORE ASSEMBLING BRACKETS AS PER
DWG BY PUTING CLEKOS.

2- ASSEMBLE AS PER DWG AND FILL UPPER AND LOWER GAPS AS
SHOWN ON DWG WITH PROSEAL OR SIKAFLEX.
PROSEAL BATCH#: _____ OR SIKAFLEX
BATCH: 17132392

6 08

MAY 27 2015

120

QC5- Inspect part completeness to step on W/O

0.00

120

QC

Quality Control

Memo

0.00

(6)

DAG
38
9-89

MAY 29 2015

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition			Completed By																		
12/15/2014							Lead hand / Supervisor Approval Verification																		
							QC / QA Coordinator Approval																		
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

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Page 2

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: <u>ST218</u>	0.00							
130									
Packaging	Memo	0.00				6x	DAS 28 9-89		
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00							
Quality Control									

15/6/2 *[Signature]*

MF
15-6-CD

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐		Misaligned/off center ☐		Turning Sequence ☐															
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____																					
Misidentified ☐		Past Due ☐																							

Picklist Print

Thursday, May 07, 2015 2:57:04 PM

Page 1

Work Order ID: 132723

132723

Parent Item: D5090-041

D5090-041

Parent Item Name: Duct Assembly

Start Date: 5/4/2015

Required Date: 5/7/2015

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A 14.06.18 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
* D5090-1 Bracket		Manufactured	No		13 2 569		Each	0.0000	**	12	FF	MAY 27 2015	
* D5090-3 Bracket		Manufactured	No		13 2 748		Each	0.0000	**	12	FF	MAY 27 2015	
* MS20470AD4-5 RIVET, UNIVERSAL HEAD		Purchased	No				Each	1,522.000	**	96	FF	MAY 27 2015	

Location

Loc Qty

Loc Code

GA 131800 1501
m128401 1477
m128813 24
ST310 21
m128813 21

96

DQA: _____ Date: _____



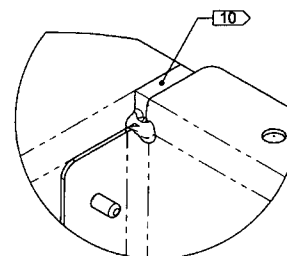
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

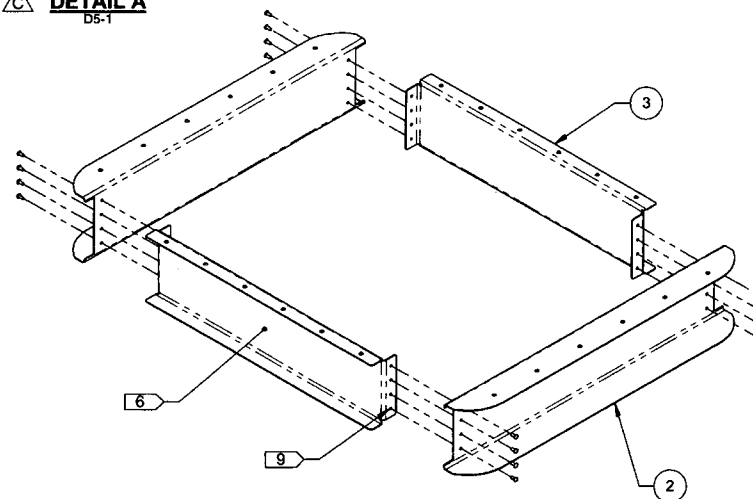
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ITEM	QTY -041	P/N	DESCRIPTION
1	X	D5090-041	DUCT ASSEMBLY
2	2	D5090-1	BRACKET
3	2	D5090-3	BRACKET
4	16	MS20470AD4-5	RIVET, SOLID, PAN HEAD



DETAIL A
D5-1

CL MAR 08 2015
W10: 132723



D5090-041 DUCT ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 AFTER TRANSFER DRILLING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.85 lbs
- 8) ASSEMBLE D5090-041 WITH CLECO CLAMPS AND VERIFY DIMENSIONS
- 9) INSTALL MS20470AD4-5 RIVETS
- 10) FILL UPPER AND LOWER GAPS WITH SIKAFLEX, PROSEAL 890 OR EQUIVALENT, 4 PL

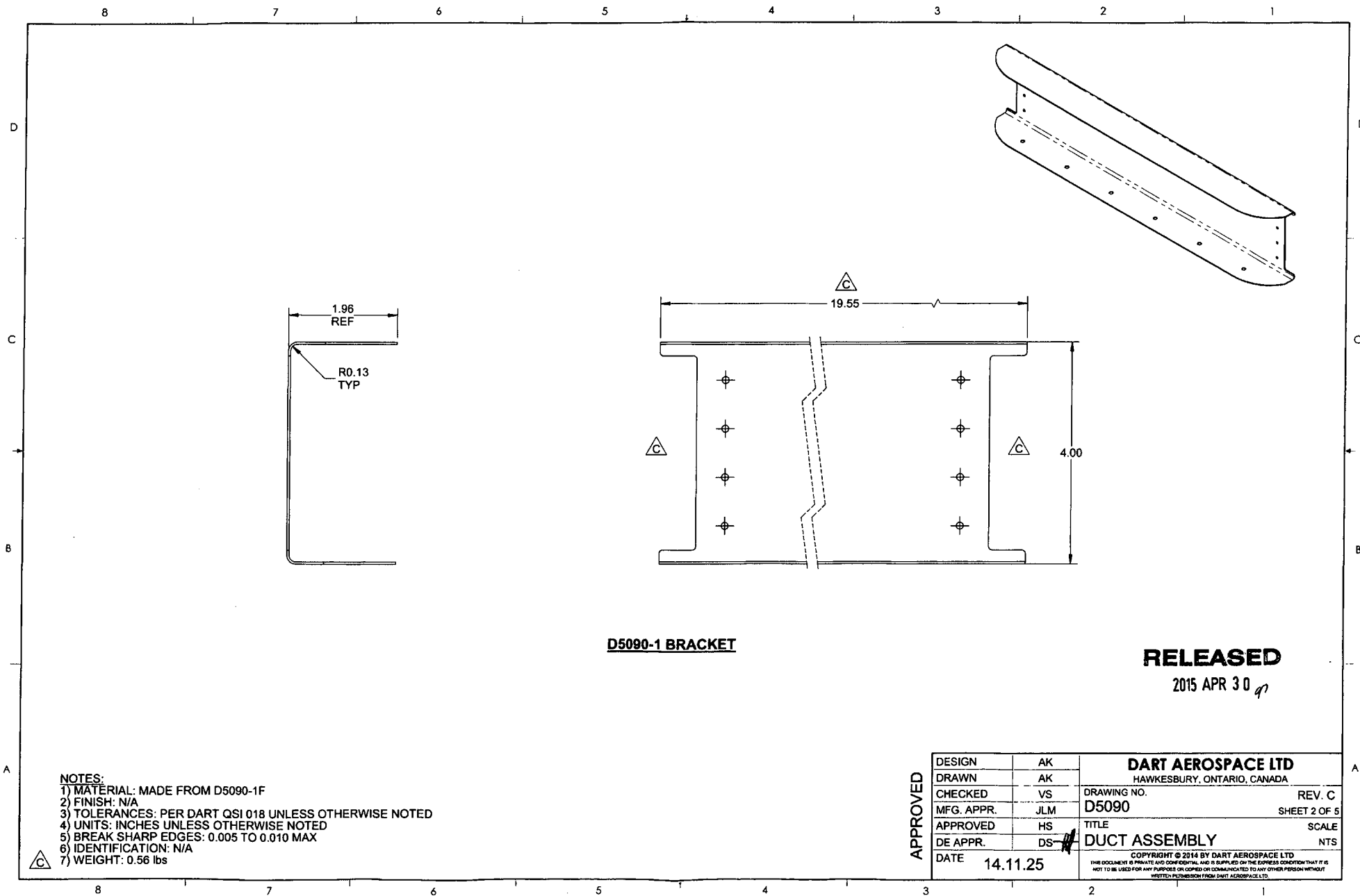
RELEASED

2015 APR 30

ECN 15-527

APPROVED

C	REVISED D5090-1 DIMENSION (ZN C4-2), REVISED D5090-1 GEOMETRY (ZN C2-2 AND ZN C5-2), REVISED NOTE 7 (ZN A8-2 AND ZN A8-3), REVISED D5090-3 DIMENSION (ZN C3-4), ADDED DETAIL A (ZN C4-1), REVISED NOTE 10 (ZN A8-1), REMOVED FLAG NOTE FROM TOP VIEW (ZN C7-1)	AK	14.11.25
B	REVISED D5090-3 TO ADD HOLES (ZN C6-4, ZN B5-5)	AK	14.06.27
A	NEW ISSUE	AK	14.04.01
REV.	DESCRIPTION	BY	DATE
DESIGN	AK	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	VS	DRAWING NO.	REV. C
MFG. APPR.	JLM	D5090	SHEET 1 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	DUCT ASSEMBLY	NTS
DATE	14.11.25	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D5090-1 BRACKET

RELEASED

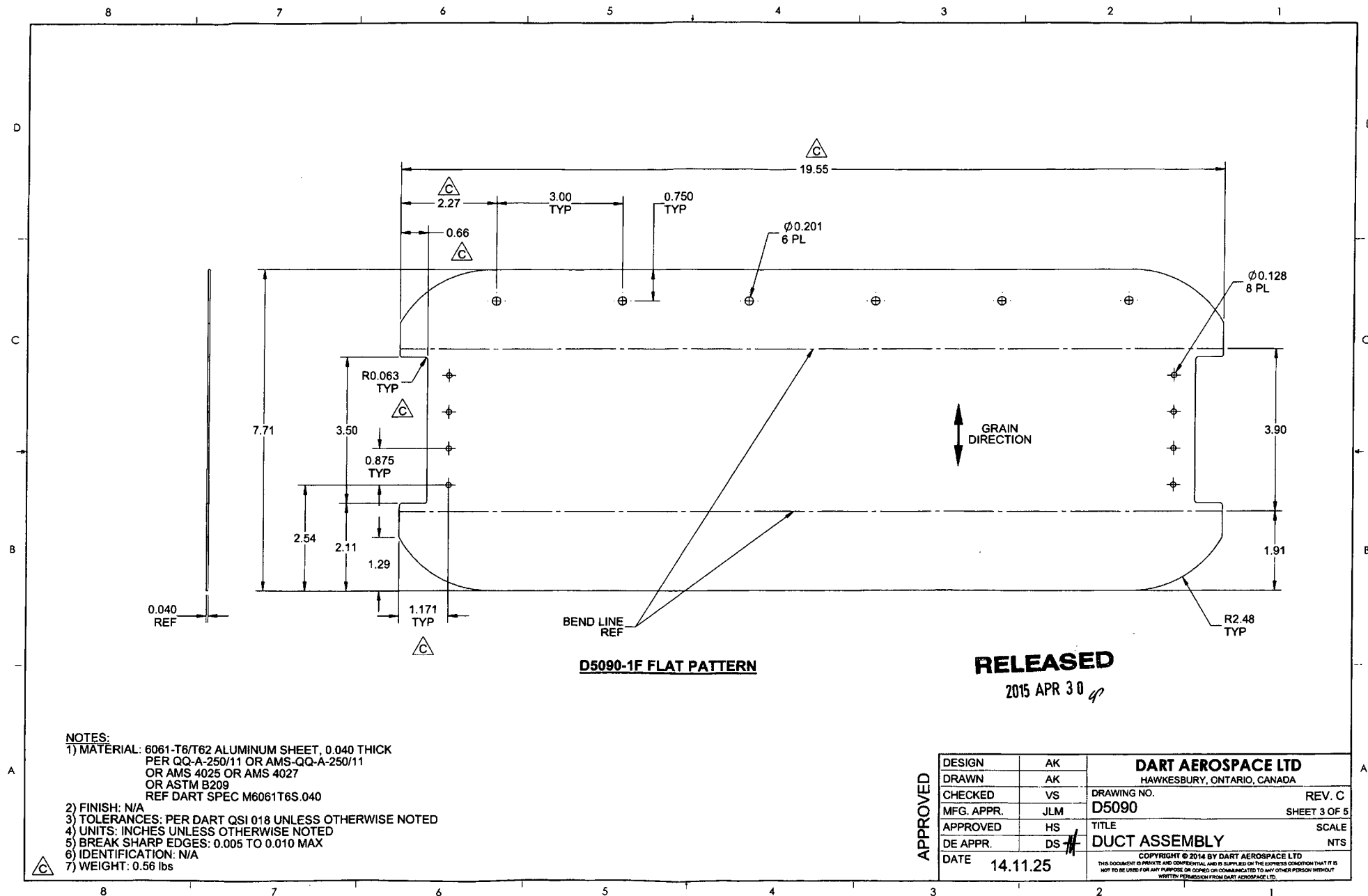
2015 APR 30

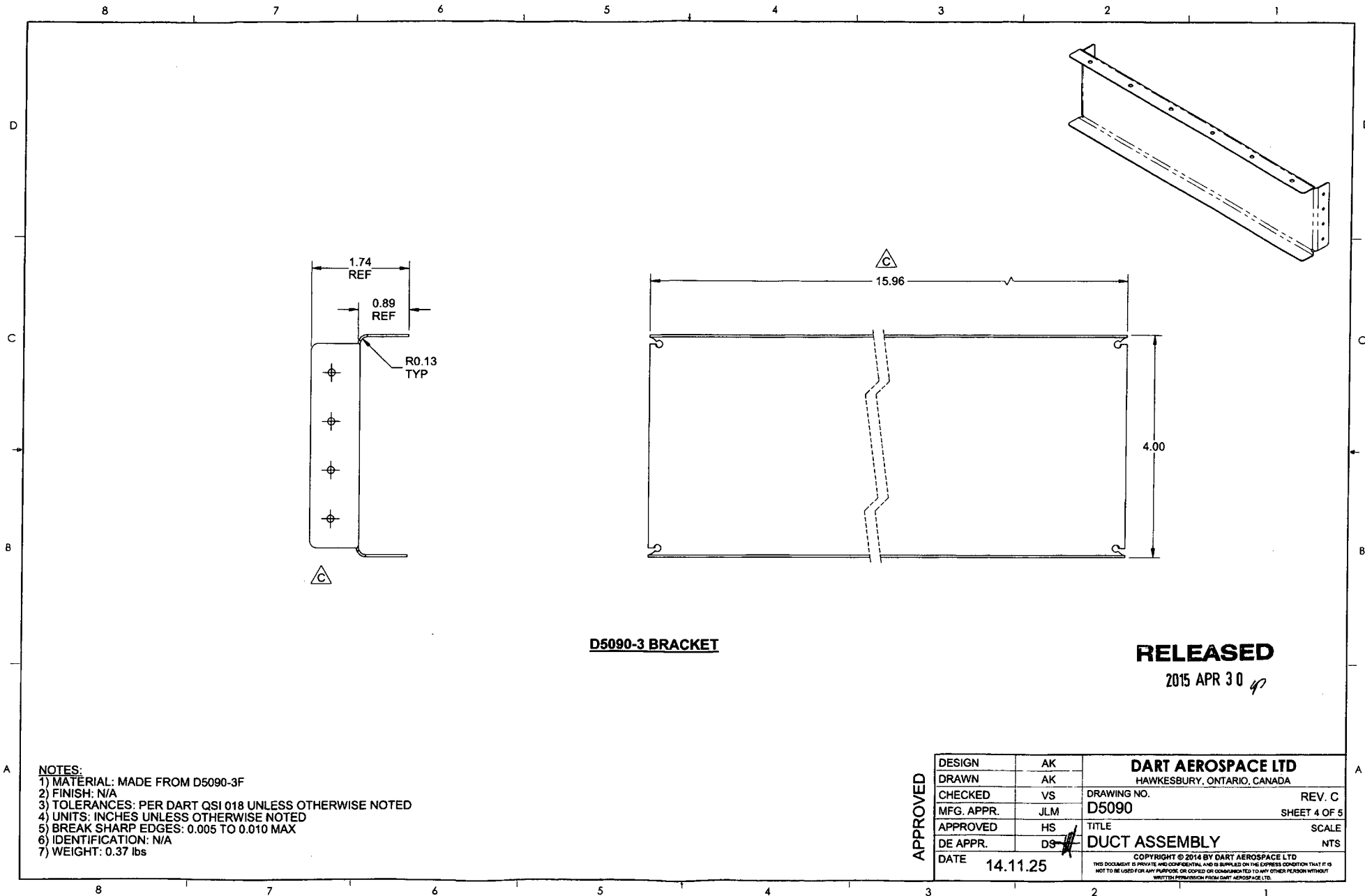
NOTES:

- 1) MATERIAL: MADE FROM D5090-1F
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.56 lbs

APPROVED

DESIGN	AK	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	VS	DRAWING NO.	REV. C
MFG. APPR.	JLM	D5090	SHEET 2 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	DUCT ASSEMBLY	NTS
DATE	14.11.25	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	





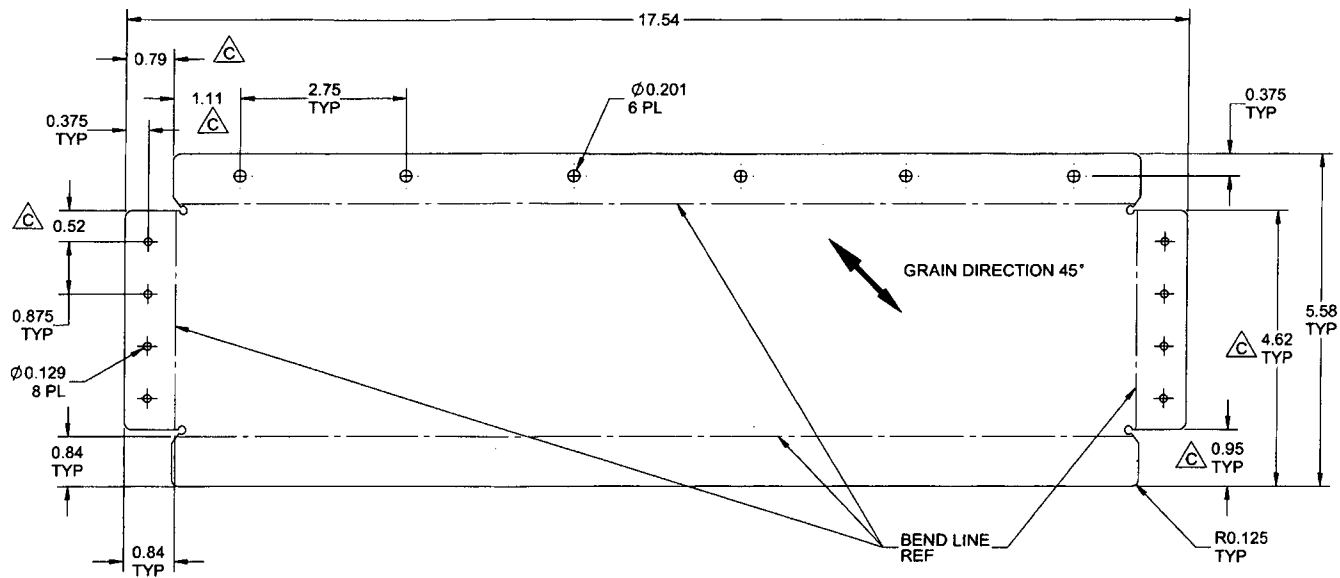
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D5090-3F FLAT PATTERN

RELEASED

2015 APR 30

NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.040 THICK
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF DART SPEC M6061T6S.040
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.37 lbs
- 8) UNDEFINED FEATURES ARE CONTROLLED BY D5090-3F.DXF

APPROVED

DESIGN	AK	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	VS	DRAWING NO.	REV. C
MFG. APPR.	JLM	D5090	SHEET 5 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	DUCT ASSEMBLY	NTS
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